

Remarks

In the official action, the Examiner rejects claims 1, 2, 6-8, 11-25, 27, 29-46, 51-56, 58 and 63-68 under 35 U.S.C. 103 as allegedly being unpatentable over Brown (US Patent No. 5,051,571) in view of Wirth (US Patent No. 6,630,656). This ground for rejection is respectfully traversed.

The Examiner begins his discussion of the rejection by trying to read particularly Figure 1 from Brown on claim 1 pending in this application.

Claim 1 recites, *inter alia*, that “the first optical beam” originates “from the first station and being directed to the second station” and that the “second optical beam” originates “from the second station and being directed to the first station.”

The Examiner points to two optical beams of Brown, namely optical beams 13 and 51 and assumes that the reader can figure out what the Examiner considers the recited “first station” of claim 1 of the present application to correspond to and what the Examiner considers the recited “second station” of claim 1 of the present application to correspond to in Figure 1. However, that is not so easily done. If it is assumed, for the moment, that laser 49 constitutes the first station and emits the optical beam 51 mentioned by the Examiner, note that Figure 1 does not show an optical beam going back to it. So, if laser 49 is not one of the stations, then exactly how is the Examiner reading Figure 1 of Brown on claim 1 pending in this application?

It is believed that the most basic problem (in terms of citing Brown) is that Brown describes an asymmetric compensation system. In fact, in Figure 1 of Brown, optical beam 51 reads out the information imposed on the SLMs by the instant beam and implicitly assumes that it is a plane wave beam of uniform amplitude (or intensity). In this regard, compare Brown’s laser 49 with Wirth’s camera 131. Thus, if beam 51 contained any distortions, Brown would not be able to enable a distortion-free beam to be received at the other end of the link. This follows since all of the optical feedback loops in the system are configured to process information that enters the system from

only one port (in the direction of beam 13, and not from the other direction, namely in the direction of beam 51).

Additionally, subparagraphs (b) and (c) in claim 1 recite a “first adaptive optical module in the path of the first beam” for, among other things, “sensing a distortion of the first beam” and a “second optical module in the path of the second beam” for, among other things, “sensing a distortion of the second beam.”

It is simply not understood how the Examiner can read Brown on the limitations of claim 1. Of course, it becomes easier if the Examiner skips over and ignores limitations in claim 1, but that is something that the Examiner is not entitled to do.

The Examiner’s citation of Wirth does not address these deficiencies. Wirth’s path to his camera 131 must be distortion free similarly to the optical beam provided by Brown’s laser 49.

The Examiner is respectfully requested to reconsider the rejection of claim 1 and the rejected claims which depend thereon.

Turning to the next independent claim in the application, claim 16 recites “a first adaptive optical module positioned in the line of sight of the first station for correcting for propagation distortion occurring between the first station and the interconnect” and “a second adaptive optical module positioned in the line of sight of the second station and in the line of sight of the first adaptive optical module for correcting for propagation distortion occurring between the second station and the interconnect.”

Brown simply does not disclose that functionality and the Examiner’s citation of Wirth does not help overcome the deficiencies of Brown in failing to meet the language quoted above in claim 16.

As such, the Examiner is respectfully requested to reconsider the rejection of claim 16 and the rejected claims which depend therefrom.

Turning now to claim 37, claim 37 has been amended to recite optical beams which are “counter-propagating” and to recite that “the propagation errors” are detected “by the at least one adaptive optical module in each of the counter-propagating optical beams” thereby clearly distinguishing Claim 37 from Brown and Wirth. As such, the Examiner is respectfully requested to reconsider the rejection of claim 37 and the rejected claims based thereon.

Claim 45 recites, *inter alia*, “correcting propagation errors in the first and second optical beams.” As noted above, Brown does not do this and the Examiner’s citation of Wirth does not make up for the deficiencies of Brown. As such, the Examiner is respectfully requested to reconsider the rejection of claim 45 and the rejected claims based thereon.

Turning to claim 54, the Examiner acknowledges that Brown does not teach an adaptive optical wavefront corrector having a first region and a second region. The Examiner asserts that it would be somehow obvious to modify Brown to obtain a wavefront corrector having a first region and a second region “in order to reduce the size, weight and cost of the system.” Exactly how does providing an adaptive optical wavefront corrector “having a first region and a second region” allegedly reduce the size, weight and cost of the resulting system?

It is noted that the Examiner seems to be making a factual assertion here. In accordance with the Rules of Practice, the Examiner is hereby requested to put his factual assertions in the form of an Affidavit as required by the Rules of Practice. Please see 37 CFR 1.104(d)(2). Moreover, the Examiner is respectfully requested to point out, with specificity, exactly where the motivation to modify Brown is coming from and, moreover, to specify, with particularity, the exact changes that would be made to the Brown disclosure. For example, in Figure 1 of Brown, exactly what changes are to be made thereto and why?

It is also noted that claim 54 also recites “a first wavefront air sensor disposed adjacent the first region and a second wavefront air sensor disposed adjacent the second region.” The Examiner does not point out where those limitations are allegedly met by

Brown. If the Examiner is planning on asserting that it is somehow obvious to so modify Brown to meet these limitations, then the Applicant respectfully requests that the Examiner point out, with specificity, just exactly where the motivation to modify Brown in coming from.

With all due respect to the Examiner, it is submitted that the motivation for modifying Brown in coming from Applicant's claims (and hence Applicant's disclosure) as opposed to from Brown or anything else in the prior art that the Examiner has pointed the Applicant's attention to. The Examiner is basically using Applicant's own disclosure against Applicant, and that is unfair to Applicant. The Examiner is respectfully requested to reconsider this rejection and the rejection of the rejected claims based thereon, and to withdraw it.

Claim 68 was also rejected by the Examiner on prior art grounds. It is noted that claim 68 recites a system comprising, *inter alia*, "a pair of AO modules for directing each beam onto the reverse direction of the other so that the first station receives the second beam and the second station receives the first beam..." How does Brown anticipate that limitation? Exactly where are the first and second stations in Brown and how do they receive and originate the optical beams recited in claim 68?

It is submitted that Brown neither anticipates nor renders obvious claim 68 and therefore the rejection based thereon should be withdrawn.

Reconsideration is respectfully requested.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

I hereby certify that this correspondence is being deposited with the United States Post Office with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents

PO Box 1450, Alexandria, VA 22313-1450 on

April 13, 2005

(Date of Deposit)

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April 13, 2005

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Respectfully submitted,



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